

UNIVERSITI TEKNOLOGI MARA

**EVOLUTIONARY GENETIC
ALGORITHM AS A GENERATIVE
TOOL IN IDENTIFYING MALAY,
CHINESE AND INDIAN CULTURAL
PRODUCT DNA**

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AUTHOR'S DECLARATION

I declare that the work in this thesis / dissertation was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that i have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Malaysia is the country that contained with the races, inherits, beliefs, religion of variety and also the culture itself. As the constitution has been made since 1957 and refined in 1963 until the era of 1Malaysia, there a lot of effort that been made and proposed such consistency in languages and fairness in the determination of the rights of citizens to achieve the understanding and unity among societies in the country. In the expectancy at the enrichment of agreements, here are the designers should take a place in the adaptation of surroundings and today's trend and issues. Culture itself makes the identity of races and this is the internal values of the country in addition to the community. As the influence to appreciation about culture and design collaborates, Scandinavians design has successfully established itself since 20th century (Esporadottir, 2011) also the design association NPO (DA) by Japanese designers expected and later succeed innovates idea among cultures that change the country through design. This unity that can be made by designing expose an idea to propose and making design DNA for Malaysia since they are only established in symbols, crafts, arts in recognizing the country identity. Furthermore, there is no official study in Malaysia being done in relation to design and the formulation to generate identity and DNA. This thesis presents an inquiry into the hybrid cross-cultural features of 3 majority races in Malaysia such the Malay, Chinese, and Indian using optimization tools called Genetic Algorithm in order to achieve new design DNA. It includes product categorizing of 3 races which organized by adapting the cross-cultural features measurement from Lin. R.T (2007) and these inform the development of a theoretical for assisting new design DNA transformation. A formal model of exploration is proposed with two mechanisms which encoded for product shapes and elements and decoded of gene types. This model is applied using visual representations which reveal new strategies for systematic new DNA generation and exploration in design.

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Art and design is the field that I put my interest since I was young. At this level of education, Research at Master degree is a huge challenge for me to take when the study is no longer expressed creativity through sketches, drawings and play with color but writing as the platforms. In delivering the new knowledge in the design field, there are studies which out of my acknowledgement such Genetic Algorithm that should be learned because its importance to my research study. Internally, it's intriguing, even though the Genetic Algorithm was basically from the field of sciences and mathematics. I am grateful as this research going smoothly.

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CHAPTER ONE

INTRODUCTION

This chapter presents overview to the study and to this thesis. It provides the background of the study which it illustrates the presentation of the problem is and what the problem is all about. This chapter also establishes the significance addressed by discussing how the study adds to the theoretical body of the knowledge in the field studied. It lays the groundwork related to the definition of scope through purpose research question and limitations.

1.1 BACKGROUND

Malaysia has three dominant races which are Malay, Chinese and Indian and the Malay is the largest community in the country according to Malaysia's demographics compared to minority ethics. The diversity of races, cultures and influences has given the modern Malaysia races the rich and unique heritage it has today. However, current globalization challenges sweeping the world require the reassigning of strategies so as to not be excluded or isolated from the speed of development or become victims of oppression by certain quarters. Dato Sri MohdNajibTun Abdul Razak, the Prime Minister of Malaysia has introduced the concept of 1Malaysia to overcome this situation on April 2009. Malaysians, regardless of race or religion need to think and act as one race, that is the Malaysian race that thinks and acts towards a common goal to build a world that is prosperous, progressive, peaceful and safe thus enabling it to compete with other communities in the world.

There are various mechanisms that have been proposed in order to unite the Malaysians. The Federal Constitution has provided in article 152 are that *Bahasa Melayu* shall be the language of the federation. If the mastery of the language by all races in Malaysia could be improved, other policies and efforts to improve unity and integration will follow suit. The Rukun Negara is another mechanism that could be used to achieve the goals of 1Malaysia and the NKRA's. The 5 tenets promote faith,